

LIST OF THE ORCHIDEÆ OF THE MUDGEES
DISTRICT.

BY ALEX. G. HAMILTON.

My object in compiling this list is to contribute something towards a knowledge of the geographical distribution of plants in New South Wales. At some future time I hope to be able to give a list of the remaining phanerogamous plants, and of the ferns.

Most of the species herein mentioned have been collected by myself, and determined by Mr. R. D. Fitzgerald from fresh specimens. For the names of a few species which I have not myself collected, I am indebted to a list given me by Dr. Woolls, of plants which he collected when on a trip to Mudgee. I have to thank both these gentlemen for their assistance in this and many other matters of the kind.

Some of the species, notably those belonging to the genus *Caladenia*, are not considered good by some authors, but Mr. Bentham points out, (in the *Flora Australiensis*) that the study of the plants in a fresh state may afford some characters which will separate those that in a dry state appear to be mere varieties, and such study leads me to think that the species in question are good ones. It is on the examination of fresh specimens that Mr. Fitzgerald bases the diagnoses of the species in his elaborate work on Australian Orchids.

The greater number of the species mentioned have been collected within a radius of five miles from Guntawang. The country here is a fair specimen of the district generally, including rocky and barren hills, moist, shady and fertile gullies, open timbered country, and rich flats on the banks of the Cudgegong River. I have also collected around Cullenbone, Reedy Creek, Two-Mile Flat, and Mudgee, but have found no species differing from those at Guntawang, with the exception of *Dendrobium*

speciosum and *Sturmia reflexa*, which Mr. J. D. Cox and myself collected in Mullamuddy Gully, about 5 miles from Mudgee. At Cooyal on the Dividing Range distant about 18 miles from Mudgee, I found a large number of the ordinary species of the district, and some peculiar to that locality. The geological formation is Hawkesbury sandstone, and, as might be expected, the plants there bear a marked resemblance to those of the Blue Mountains, and of that part of the coast district where sandstone prevails. Unfortunately it lies so far away from me that I have not been able to make a complete collection. I am sure that if I could examine the place thoroughly it would yield many additional species.

1. STURMIA REFLEXA, F. v. M.

This plant I have found only on rocks facing south in shady ravines at Cooyal, and at Mullamuddy. The flowering season is from June to September, but some plants in my garden flowered as early as April 1st.

2. DENDROBIUM SPECIOSUM, Smith.

At Cooyal on sandstone, and at Mullamuddy on basalt. The plants at the latter place had the finest racemes of flowers I have ever seen. It flowers in October.

3. DENDROBIUM TERETIFOLIUM, R.Br.

Collected at Cooyal on moist sandstone rocks, associated with *Hymenophyllum tunbridgense*. The plant was small and stunted.

4. { DIPODIUM PUNCTATUM, R. Br.
var. *Hamiltonianum*, Bailey.

I have collected the ordinary purplish-red form of this plant at Cooyal, on both eastern and western slopes of the Dividing Range. The yellow variety figured by Mr. Fitzgerald in Aust. Orchids, Part 7, pl. 4, extends from Guntawang to Cooyal (21

miles), and on one occasion I collected it on the eastern slope of the Dividing Range there. But the purple-flowered plant I have not seen away from the sandstone. Of the yellow variety, Mr. Fitzgerald says—"It may possibly be *D. squamatum*, referred to (in a note) by Bentham, in the *Flora Australiensis*, as from New Caledonia." But the plants which I sent Mr. Fitzgerald must have altered in colour, as he tells me they were greenish when he got them, and were figured so, whereas when I packed them up, they were yellow inclining to orange. Mr. F. M. Bailey, who courteously sent me some dried flowers, described it as a variety of *D. punctatum* under the name *Hamiltonianum*, in *Proc. Linn. Soc. of New South Wales*, Vol. VI, page 140. He informs me that he collected it at Stanthorpe and on Moreton Island, but makes the same remark as to the colour being yellow.

The purple form flowers in December and January; the yellow from November to January. Judging from the few flowers that mature seed, I think it depends on insects for fertilisation.

5. THELYMITRA LONGIFOLIA, Forst.

Common all over the district. It flowers from September to October. As it seldom opens its flowers and yet invariably bears seed, it must be self-fertilised.

6. THELYMITRA MEGCALYPTRA, R. D. F.

Aust. Orch. Vol. I., Pt. 5, 1871.

There are many varieties of colour in this flower ranging from pure white, through pink to dark lilac. It is generally distributed over the district, and from its large size is worthy of cultivation. It flowers from September to October, opening about noon, and remaining open later each day till fertilised, or till it withers. As it seeds freely, it must be much visited by insects, but I have never been able to observe the process of fertilisation taking place.

7. THELYMITRA NUDA, R. Br.

This is one of the plants I have not found. It has been collected by Dr. Woolls in this district.

8. DIURIS AUREA, Sm.

Flowers in September and October.

9. DIURIS MACULATA, Sm.

Widely distributed. Flowers in September and October.

10. DIURIS PEDUNCULATA, R. Br.

Found all over the district. It is the first of the family to blossom, beginning early in August, and lasting well on into September. It bears seed very freely from its being frequented by a small brown and hairy beetle (*Liparetrus* sp.), which gnaws the ridges off the labellum, and at the same time fertilises the plant.

11. DIURIS ABBREVIATA, F. v. M.

This species frequents the hills, and flowers from the beginning of October till early in November. It is sometimes fertilised by a folding-back of the stigma, a striking exception to the other members of the genus, which are sterile without the aid of insects. In this respect it approaches *Orthoceras strictum*.

12. DIURIS SULPHUREA, R. Br.

Common on the lowlands. Flowers in September and October.

13. DIURIS TRICOLOR, R. D. F.

Jour. Bot. Vol. XXIII. 1885, p. 135.

Mr. Fitzgerald named this plant from specimens which I sent him. It is common all over the district, but cannot be mistaken for any other species. It is nearest to *D. elongata*, but differs much in habit as well as in structure. Baron von Mueller, to whom I sent some dried plants, informs me that he has had it from other localities.

14. DIURIS ELONGATA, R. Br.

This is *D. punctata* of the Flora Australiensis, and *D. lilacina* of Baron von Mueller. A variety *D. longissima* is recorded in the Flora as having been collected at Mudgee. It is the latest *Diuris* to flower, lasting from the middle of September well on into December. There is a considerable amount of difference between the hill and the lowland forms.

15. DIURIS DENDROBIOIDES, R. D. F.

A very rare orchid. Flowers in September.

16. CALOCHILUS CAMPESTRIS, R. Br.

Flowers in the latter end of September. Sometimes fertilised like *Diuris abbreviata*, by a folding-back of the stigma.

17. PRASOPHYLLUM FLAVUM, R. Br.

I have only once found this species, at Reedy Creek, but it was also collected by Dr. Woolls. Flowers in November.

18. PRASOPHYLLUM BREVILABRE, J. Hooker.

Flowers from end of August till end of October.

19. { PRASOPHYLLUM PATENS, R. Br.
 ,, ,, var. *truncatum*, Lindl.

Flowers in September and October.

20. { PRASOPHYLLUM FUSCUM, R. Br.
 ,, ,, var. *grandiflorum*.

Recorded in the Flora Australiensis as collected at Mudgee by Dr. Woolls.

21. PRASOPHYLLUM ALPINUM, R. Br.

On the hills. Flowers in November.

22. PRASOPHYLLUM RUFUM, R. Br.

Rare. On flats and creek-banks. Flowers in May and June.

23. MICROTIS PORRIFOLIA, Spreng.

Flowers in October and on into December.

24. MICROTIS PARVIFLORA, R. Br.

Flowers about the same time as its congener.

25. CORYSANTHES — n. sp.

This plant I have discovered only this year. So far as I know it is a very local plant, only growing in one gully of the Beaudesert Hills. It must be a shy bloomer, as I have searched the same place every year since 1878, and this is the first time I have seen it. It is at present in Mr. Fitzgerald's hands for description. It comes nearest to *C. pruinosa*. Flowers in July and August.

26. PTEROSTYLIS CONCINNA, R. Br.

Generally distributed in moist gullies. Flowers from June to September.

27. PTEROSTYLIS STRIATA, R.D.F.

Rare. I know only one place in the Beaudesert Hills where this plant grows. Flowers in July.

28. PTEROSTYLIS CURTA, R. Br.

Common in shady corners among the hills and rocks. Flowers from July to October.

29. PTEROSTYLIS ACUMINATA, R. Br.

Collected by Dr. Woolls.

30. PTEROSTYLIS NUTANS, R. Br.

Confined to one spot in Biraganbil hills, and to a gully at Cooyal. Flowers in June and July.

31. PTEROSTYLIS CLAVIGERA, R.D.F.

R. D. Fitzgerald, Journ. of Bot. Vol. XXIII., p. 135.

Named from specimens procured from Biraganbil Hills. Near *P. nana*, but it has glands on the anther wings. Flowers in September.

32. PTEROSTYLIS REFLEXA, R. Br.

There are two well-marked varieties of this plant growing in the neighbourhood of Guntawang, which I took to be distinct species. Both are figured in Australian Orchids, Vol. I., pt. 5, pl. 7. The larger variety may possibly be the plant named *P. revoluta* by R. Brown, but Bentham says that the two forms pass into each other to such an extent that it was impossible to sort specimens into distinct varieties even. As I had never collected any plant linking the two I thought them good species till Mr. Fitzgerald on receiving both from me gave me the above information. Flowers from March till July.

33 PTEROSTYLIS OBTUSA, R. Br.

Found only at Cooyal in rich soil at the foot of a sandstone cliff. Flowers in April.

34. PTEROSTYLIS PARVIFLORA, R. Br.

The plants I sent Mr. Fitzgerald he informed me were *P. aphylla*, but added that he considered this only a variety of *P. parviflora*, so I have placed it under that name. It is generally distributed but is not very abundant. Flowers in April, May, and June.

35. PTEROSTYLIS MUTICA, R. Br.

Common in all parts. Flowers from August to October.

36. *PTEROSTYLIS CYCNOCEPHALA*, R. D. F.

Also a common plant, but begins a little later than the preceding, and rarely lasts past the middle of September.

37. *PTEROSTYLIS RUFA*, R. Br.

Generally distributed. Flowers in September and November, but I have found it as early as July.

38. *PTEROSTYLIS MITCHELLI*, Lind.

Common. Generally considered a variety of No. 37, but they seem very distinct indeed to me. Flowers in September, October, and November.

39. *PTEROSTYLIS SQUAMATA*, R. Br.

Another form usually included in *P. rufa*. Generally distributed on rocky hill-sides. Flowers from September to November.

40. *PTEROSTYLIS WOOLLSII*, R. D. F.

Plentiful on the eastern slope of the Beaudesert Hills. Flowers in October, November, and December.

Dr. Woolls also collected *P. gibbosa*, which belongs to the same group as the preceding four, but I believe it is now generally considered to be a variety only.

41. *PTEROSTYLIS LONGIFOLIA*, R. Br.

This variety differs from Mr. Fitzgerald's figure in having a perfectly smooth labellum. It flowers from June to September.

42. *CALEANA MINOR*, R. Br.

Very rare. Flowers in November.

43. *ACIANTHUS FORNICATUS*, R. Br.

Very common. Flowers from April to September.

44. CYRTOSTYLIS RENIFORMIS, R. Br.

Common. Flowers from August to October.

45. LYPERANTHUS SUAVEOLENS, R. Br.

(*Caladenia suaveolens* in the Flora Australiensis).

It has been objected to the specific name that the plant is not at all sweet-scented, but I have repeatedly noticed that it has a very rich scent when exposed to hot sun. It is very local. Flowers from September to November.

46. ERIOCHILUS AUTUMNALIS, R. Br.

Common everywhere. Flowers from March to May. In experimenting on this plant I have repeatedly noticed a viscosity of the pollinia, so that when it is attempted to withdraw them from the anthers a piece sometimes draws out into a glutinous thread, which on being stretched flies back, and carries with it a piece of the pollen. This sometimes strikes the stigma and adheres. In this way the plant is possibly often fertilised by its own pollen with the help of insects.

47. CALADENIA CLAVIGERA, A. Cunn.

Rather rare. Flowers in September and October.

48. CALADENIA DILATATA, R. Br.

Common. Flowers from September to November.

49. CALADENIA ARENARIA, R. D. F.

Rare. Flowers in October and November.

50. CALADENIA FILAMENTOSA, R. Br.

Common on stony hill-sides. Flowers in August and September.

51. CALADENIA CUCULLATA, R. D. F.

Collected at Guntawang, Goodaman, and Cooyal. It has a most abominable smell, and on more than one occasion I have had a cloud of blowflies round me when carrying specimens. It is possible that these may be the insects which fertilise this plant. Flowers in October.

52. CALADENIA CARNEA, R. Br.

Common. This is the first *Caladenia* to flower. From the middle of August to October.

53. CALADENIA ALBA, R. Br.

Collected at Cooyal in September, by Dr. Woolls.

54. CALADENIA CÆRULEA, R. Br.

Common. August to October.

55. CHILOGLOTTIS FORMICIFERA, R. D. F.

Collected only at Cooyal. Flowers in September.

56. CHILOGLOTTIS TRAPEZIFORMIS, R. D. F.

Guntawang, Cooyal, Mullamuddy. Flowers in September and October.

57. GLOSSODIA MAJOR, R. Br.

Common all over the district. Flowers from the end of August to the end of October.

Many of the species especially those growing in open flat country are becoming scarce, and will, I fear, sooner or later become extinct. This may be attributed to many causes, the chief being the struggle between introduced and indigenous plants, to the

TABLE SHOWING DISTRIBUTION TO OTHER COLONIES—*continued*.—

NAMES.	County of Cumberland.	Queensland.	Victoria.	Tasmania.	South Australia.	West Australia.	REMARKS.
Diuris	5	7	6	5	6	4	
aurea	*	*	*	*	*	...	
maculata	*	*	*	*	*	...	
pedunculata	*	*	*	*	*	...	
abbreviata ... ..	...	*	...	...	...	...
sulphurea	*	...	*	*	*	...	
tricolor ... ..	...	...	...	...	...	...	Not in Census.
elongata (punctata)	*	...	*	...	*	...	
dendrobioides ... ..	...	...	...	...	..	...	Not in Census.
Calochilus	2	2	2	1	1	1	
campestris ... ..	*	*	*	*	...	...
Prasophyllum	9	6	10	12	8	9	
flavum	*	*	*	*	*	...	
brevilabre ..	...	*	*	*	...	...
patens	*	*	*	*	*	...	
fuscum	*	*	*	*	*	...	
alpinum ... ..	...	...	...	...	...	...	Generally considered a variety of <i>P. fuscum</i> .
rufum ... ..	*	*	*	*	...	...
Microtis	2	2	3	2	2	5	
porrifolia	*	*	*	*	*	*	
parviflora	*	*	*	*	*	*	
Corysanthes	4	1	1	1	1	1	
n. sp. ... ..	...	...	...	...	...	...	From Mudgee only as yet.
Pterostylis	15	10	17	14	13		
concinna	*	*	*	...	*	...	
striata ... ..	...	..	...	...	...	...	Not in Census.
curta	*	*	*	*	*	...	
acuminata ... ..	...	*	*	...	...	...
nutans	*	*	*	*	*	...	
clavigera ... ..	...	...	...	...	...	...	From Mudgee only
reflexa	*	...	*	...	*	*	
obtusa ... ..	*	*	*	*	...	...
parviflora ... ..	*	*	*	*	...	...
mutica	*	*	*	*	*	...	
cynocephala ... ..	...	...	...	...	...	...	Not in Census.
rufa	*	*	*	*	*	*	
Mitchelli ... ..	...	...	*	...	...	...	Not in Census.

TABLE SHOWING DISTRIBUTION TO OTHER COLONIES—*continued*.—

NAMES.	County of Cumberland.	Queensland.	Victoria.	Tasmania.	South Australia.	West Australia.	REMARKS.
<i>Pterostylis squamata</i>	Not in Census.
<i>Woollsii</i>	” ”
<i>longifolia</i>	*	*	*	*	...	
<i>Caleana</i>	2	1	2	2	...	1
<i>minor</i>	*	*
<i>Acianthus</i>	3	1	2	3	2	1
<i>fornicatus</i>	*	*
<i>Cyrtostylis</i>	1	1	1	1	1	1
<i>reniformis</i>	*	*	*	*	*	*
<i>Lyperanthus</i>	2	...	3	3	1	2
<i>suaveolens</i>	*	* (= <i>Caladenia suaveolens</i> .)
<i>Eriochilus</i>	1	1	2	1	2	5
<i>autumnalis</i>	*	*	*	*	*	...
<i>Caladenia</i>	6	3	9	10	10	25
<i>clavigera</i>	}	*	*
<i>dilatata</i> ... ..		...	...	...	...	*	*
<i>arenaria</i> ... ..		...	...	...	...	...	...
<i>filamentosa</i> ... ..		...	...	...	*	*	*
<i>cucullata</i>	Not in Census.
<i>carnea</i>	*	*	*	*	*	...
<i>alba</i>	*	*
<i>cærulea</i>	*	*	*	*	*	...
<i>Chiloglottis</i>	3	1	4	2	...	...
<i>fornicifera</i>	*
<i>trapeziformis</i>	*	...	*
<i>Glossodia</i>	2	2	2	1	1	3
<i>major</i>	*	*	*	*	*	...
Total common genera...	18	17	18	17	14	14	
Total common species...	35	32	34	29	25	8	

Appended is a table giving an approximation to the number of genera and species, and the number of common genera and species also :—

	Cumbrld.	Q.	V.	T.	S.A.	W.A.
Total genera	26	44	22	21	17
Total species	78	156	80	71	61
Total genera common to Mudgee	...	18	17	18	17	14
Total species „ „	35	32	34	29	8

The Cumberland genera not represented here are *Bolbophyllum*, *Sarcochilus*, *Cymbidium*, *Galeola*, *Gastrodia*, *Spiranthes*, *Orthoceras*, and *Cryptostylis*. I believe I collected *Cymbidium canaliculatum* here some years ago, but at this length of time cannot be certain, having unfortunately neglected to make drawings or preserve specimens. The eight above-mentioned genera are mostly epiphytal, or semi-epiphytal. The absence of these plants is doubtless due to the dryness of the climate and soil. This is rendered probable by the fact that in the gullies at Cooyal and Mullamuddy, two species of *Dendrobium* and one of *Sturmia* flourish. In these gullies, on account of the depth and shade, there is much more moisture than is found in similar places among lower hills.

The plant which I suppose to have been *Cymbidium* was collected in the same gully as the new species of *Corysanthes*, which is also a moisture-loving form, and almost confined to the coast district and mountains. I cannot understand why *Orthoceras strictum*, *Caleana major*, and *Cryptostylis* do not extend to this district, as they are capable of resisting a considerable amount of drought. I fully expected to find them on the Dividing Range at Cooyal, but was disappointed.

We cannot be said to have any species—much less a genus peculiar to the district, *Diuris tricolor* having been collected elsewhere. *Pterostylis clavigera* and *Corysanthes* (n. s.) may have been overlooked on account of their being so small and inconspicuous.